

January 25, 2013

To: Osage Negotiated Rulemaking Committee
Mr. Eddie Streater, Designated Federal Officer for the Commission
Acting Deputy Regional Director – Trust Services, Eastern Oklahoma Region
Bureau of Indian Affairs
3100 W. Peak Blvd
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From: Robert G. Hamilton, Director
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BACKGROUND

The Nature Conservancy of Oklahoma (TNC) is a major stakeholder in Osage County. TNC purchased the historic Barnard Ranch north of Pawhuska, OK in late 1989 to serve as the critical core of the Tallgrass Prairie Preserve. The Conservancy raised \$15M in private funds for the project. Additional land purchases and leases have now built the preserve managed area to just under 40,000 acres, with an adjacent 6,153 acres protected by conservation deed restrictions and easements. TNC's conservation program extends beyond the borders of the preserve, with active efforts to work with our rancher neighbors on prescribed burning and wildfire control, rangeland research, wildlife restoration, and land protection such as conservation easements.

Originally spanning portions of 14 states from Texas to Minnesota, tallgrass prairie was one of North America's magnificent pre-settlement ecosystems. However, conversion to cropland, urban sprawl and other habitat losses have left less than 10% of this characteristic American landscape. The 3.8 million acre Flint Hills of Oklahoma and Kansas comprise the only expansive, intact tallgrass prairie landscape remaining in North America. The Nature Conservancy's Tallgrass Prairie Preserve is located in the southern end of the Flint Hills, locally referred to as the "Osage Hills" in Oklahoma.

The primary ecological goal of the Tallgrass Prairie Preserve is to protect and maintain the native biological diversity by restoring a functional grassland landscape. Managing for a patchy landscape (heterogeneity) is the core idea, thus providing a diversity of habitat opportunities for the complete array of native plants and animals. Grazing and fire were two of the primary ecological forces on the pre-settlement Great Plains, and their interaction was what created and constantly shifted the landscape patch mosaic.

Both bison and cattle are managed with a focus on landscape heterogeneity to promote landscape, and thus, biological diversity. The Tallgrass Prairie Preserve bison herd consists of 2,700 head on 23,500 acres. The fire-bison interaction regime allows the herd free-ranging access year-round to an ever-shifting array of burn patches. The lush re-growth following a burn is very attractive to the bison, resulting in a fire-induced rotational effect, which maintains a dynamic

mosaic of landscape patches. Research and monitoring has shown this wild landscape is successfully supporting the full array of native plants and wildlife.

Seasonal cattle grazing with a local rancher is conducted under a lease arrangement on 13,000 acres. Most of this acreage is devoted to a promising cattle patch-burn research project with Oklahoma State University that was initiated in 2001. This "conservation grazing" study is testing the wildlife and plant community responses, and cattle gains, in patch-burn versus completely burned pastures (the typical area range management). The objective is to develop and export cattle management techniques that will improve wildlife habitat diversity.

In May 2004, construction of the Tallgrass Prairie Ecological Research Station was completed at the preserve headquarters in a partnership with the University of Tulsa. This 6,500 sq ft laboratory and classroom facility greatly enhances the preserve's applied and basic ecological research program. Several dozen research projects are typically active on the Preserve at any given time, and over 170 publications in scientific journals have been produced.

Approximately 20,000 visitors tour the Tallgrass Prairie Preserve each year. In most years, we will have visitors from all 50 US states, and three to four dozen foreign countries. The preserve headquarters gift shop/education center is staffed by a dedicated group of 100 volunteer docents. A total of thirteen TNC staff and their family members live on the preserve.

CONCERNS REGARDING MINERALS PRODUCTION

The Tallgrass Prairie Preserve contains 220 operating oil and gas wells. The Nature Conservancy regards this "working landscape" as an opportunity to demonstrate that energy production and conservation can co-exist. Since the establishment of our Oklahoma Chapter in 1986, we have worked with numerous energy companies on all of our preserves where there is active energy development. Our efforts are aimed at implementing effective conservation within the context of local economies. We aim to minimize the environmental impact of oil and gas production on and around our preserves by minimizing the amount of soil disturbed, preventing the spread and use of invasive plants, preserving high quality wildlife habitat by reducing noise levels and carefully considering infrastructure location, and protecting surface and groundwater from leaks or spills. In other words, we try to ensure that impacts are minimized during both the short and long term. For over 25 years in Oklahoma, our approach has been and continues to be collaborative conservation within the context of local economies.

Human health and safety is TNC's utmost concern. The recent drilling of three horizontal wells on the preserve have created a serious threat – toxic hydrogen sulfide gas (H₂S). These wells have produced abundant natural gas, but unfortunately, the gas contains very high concentrations (900ppm) of H₂S. Producers are flaring the gas, which has raised concerns regarding air quality, including whether all H₂S is being eliminated and what other harmful compounds may be in the stack emissions.

These H₂S and air quality concerns were heightened in July 2012, when two researchers experienced respiratory distress and nausea while working in the vicinity of a flare stack on the preserve. In both instances, medical attention was sought and there are concerns that the illnesses were due to exposure to the flaring emissions. We would like to see CFR226 updated such that the best available flaring technology in the industry (such as clean-burn variable tip flares) must be utilized in order to reduce risks to human health. We must all work together to insure the safety of everyone that lives on, works on, and visits the preserve and Osage County.

Flaring of natural gas also has several additional environmental concerns. Osage County provides habitat for the American burying beetle (*Nicrophorus americanus*), listed as an Endangered Species by the US Fish and Wildlife Service. The preserve is home to one of the largest known populations of this species. The American burying beetle is a strong nocturnal flyer that is drawn to light sources, so open flares are a direct threat. TNC has worked with oil and gas producers on the preserve to re-engineer their gas flare stacks so that the combustion flames are contained within

the stack and no light is emitted. However, additional concerns associated with flaring gas containing H₂S are published reports of impacts to livestock and acidification of soils. We would like to see CFR226 updated to address these issues.

Water quality and quantity is another concern, especially regarding the vast quantity of water required for drilling and hydraulic fracturing of horizontal wells, and the risk they pose to groundwater integrity. First, we question the validity of the freshwater aquifer data that the Bureau of Indian Affairs (BIA) is using to determine the depth of surface casing requirements on new oil and gas wells. In one instance with a planned horizontal well, BIA determined that the depth of fresh water to be 155 feet, thus calling for surface casing to be set to a depth of 205 feet. However, the preserve has two active residential water wells in the next quarter section that are 250 and 290 feet deep. We would like to see the BIA update its freshwater aquifer data/maps, ground-truth by gathering data from existing freshwater wells, and demand logging and reporting of aquifer data from all wells drilled in the future. In addition, CFR226 should mandate that mineral lessees determine the baseline water quality of all adjacent freshwater wells prior to drilling, and then continue to monitor them at a regular interval thereafter.

Wildlife conservation should also be incorporated into CFR226, especially for high-priority species such as the Greater Prairie Chicken (*Tympanuchus cupido*). Osage County contains the last significant population of this species in Oklahoma. The closely-related Lesser Prairie Chicken (*Tympanuchus pallidicinctus*) in western Oklahoma is currently being considered for listing under the Endangered Species Act by the US Fish and Wildlife Service. It is both economically and environmentally prudent to conserve a species before it reaches that point. Oil and gas development poses a threat to the Greater Prairie Chicken by fragmenting the expansive native tallgrass prairie tracts that the species requires. Of particular impact are overhead powerlines, the location of wells, facilities, and roads, since Prairie Chickens have shown avoidance of human structures and disturbance. We suggest a Best Management Practices approach, where oil and gas practices are modified in core habitat areas to lessen impacts to Prairie Chickens (ie, bury powerlines, avoid leking/breeding sites, consolidate facilities and roads and locate them at the edge of open prairie and off of prairie ridgelines and hilltops).

In addition to the above CFR226 regulatory concerns, we suggest that BIA greatly increase its field capacity. Currently, there is a lack of day-to-day field oversight by the BIA of oil and gas drilling and production activities. Most ranches have old scars and/or current pollution issues associated with oil and gas production. The BIA has very little to no presence in the field, and surface owners bear the burden of monitoring, reporting, and remediating problems. We would like to see the BIA actively and regularly monitor all drilling and production field activities, and take corrective actions directly with producers. We would also like to see increased openness and transparency with the BIA. As much information as possible should be available to the public - ideally on-line: freshwater aquifer maps, well location maps, mineral lease-holder maps and contact information, etc.

Thank you for this opportunity to provide comments to the Osage Negotiated Rulemaking Committee. The Nature Conservancy of Oklahoma looks forward to working cooperatively with all stakeholders to insure that Osage County protects its incredible economic and ecological values.

Please contact me should you have any questions.

Sincerely,

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